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EXAMINER

STOYNOV, STEFAN

ART UNIT	PAPER NUMBER
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2116

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/780,934	TSAI ET AL.	
	Examiner	Art Unit	
	Stefan Stoynov	2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-6,9,10 and 13 is/are rejected.
- 7) ☒ Claim(s) 2,3,7,8,11 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

The rejections are respectfully maintained and reproduced infra for applicant's convenience.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4, and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Tang et al., US Patent Appl. Pub. No. 2003/0206442.

Re claim 1, Tang discloses a system for actively booting a computer system electrically connected with a storage medium which stores boot codes thereon for initializing an operating system of the computer system (paragraph 0005, lines 11-18, paragraph 0006, lines 1-5), and said system comprising:

a non-XIP type storage medium controller accessing the boot codes from the storage medium when said storage medium is a non-XIP type storage medium (paragraph 0022, lines 4-5, FIG. 2, 230);

an internal buffer coupled to the non-XIP type storage medium controller, storing the boot codes accessed from the non-XIP type storage medium (paragraph 0023, lines 3-8, paragraph 0024, lines 2-5, FIG. 3, 310, 335, 350); and

a multiplexing storage medium controller coupled to the internal buffer (paragraph 0024, line 2, FIG. 3, 330), controlling a central processing unit (CPU disposed in the computer system (inherently disclosed, since Tang discloses the above described system within a computer, notebook computer, and PDA, all of which devices include a CPU accessing the boot code – paragraph 0005, lines 1-4) to access the boot codes from the internal buffer to initiate the operating system of the computer (paragraph 0024, lines 9-16, FIG. 3).

Re claim 4, Tang further discloses the system wherein the multiplexing storage medium controller accesses the boot codes directly from the storage medium to the CPU for initiating the operating system when said storage medium is a XIP type storage medium (paragraph 0024, lines 6-8, lines 9-16, FIG. 1, FIG. 2, FIG. 3, 325, 330).

Re claim 5, Tang further discloses the apparatus wherein the non-XIP type storage is a NAND-type flash memory (paragraph 0006, lines 1-5, FIG. 2, 230).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 6, 9, 10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tang et al., US Patent Appl. Pub. No. 2003/0206442, in view of Hatakar, US Patent Appl. Pub. No. 1004/0088701.

Re claims 6 and 10, Tang discloses a computer system providing a method for actively enabling the computer system and a method for actively booting a computer system, with access of boot codes from a storage medium to initiate an operating system of a computer system (paragraph 0003, lines 1-5, paragraph 0004, lines 1-4, lines 11-18), comprising steps of:

a CPU disposed in the computer system (inherently disclosed, since Tang discloses the above described system within a computer, notebook computer, and PDA, all of which devices include a CPU accessing the boot code – paragraph 0005, lines 1-4) directly accessing the boot codes directly from the storage medium through a multiplexing storage medium controller when said storage medium is in XIP type storage medium (paragraph 0024, lines 6-8, lines 9-16, FIG. 1, FIG. 2, FIG. 3, 325, 330);

facilitating a non-XIP type storage medium controller to access the boot codes from the storage medium and then to store the boot codes in an internal buffer when said storage medium is a non-XIP type storage medium (paragraph 0023, lines 3-8, paragraph 0024, lines 2-5, FIG. 2, 230, FIG. 3, 310, 335, 350), and

the CPU implementing the boot codes to initiate the operating system of the computer system (paragraph 0003, lines 1-5, paragraph 0005, lines 1-4, lines 11-18, paragraph 0024, lines 9-16, lines 21-25).

Tang fails to disclose determining whether the storage medium is a XIP type storage medium.

Hatakar teaches dynamic reconfiguration of XIP and non-XIP applications by monitoring the application usage (Abstract, lines 1-5). Hatakar further teaches determination of whether to reconfigure between an XIP and non-XIP (and vice versa) application based on comparison with an XIP list (paragraph 0032, lines 1-10, paragraph 0033, lines 9-18, FIG. 5). In addition, Hatakar teaches storing the compressed non-XIP applications in one storage device (paragraph 0030, lines 9-12, paragraph 0034, lines 1-4, FIG. 3, 316) and storing the XIP applications in a different storage device (paragraph 0026, lines 13-19, paragraph 0030, lines 1-2, FIG. 3, 320). Thus, by determining whether or reconfigure the application in question, it is also determined on which storage device (what storage type device) that application resides. In, Hatakar, the above described system and method, determine the XIP and non-XIP mode at run time (paragraph 0003, lines 1-7). Thus, the advantages (e.g. memory increased speed or decreased memory space) of using both types of memories are achieved (paragraph 0003, lines 16).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use the system and method for determining whether to reconfigure an XIP or non-XIP application (residing on its corresponding storage

device), as suggested by Hatakar with the system and method disclosed by Tang in order to implement determining whether the storage medium is a XIP type storage medium. One of ordinary skill in the art would be motivated to do so in order to increase the memory speed or decrease the required memory space when using XIP and non-XIP types of memories.

Re claims 9 and 13, Tang further discloses the computer system providing a method for actively enabling the computer system and the method for actively booting a computer system wherein the non-XIP type storage medium is a NAND-type flash memory (paragraph 0006, lines 1-5, FIG. 2, 230).

Allowable Subject Matter

Claims 2, 3, 7, 8, 11, and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Re claims 2 and 11, the prior art of record fails to disclose or suggest the subject matter of claims 1 and 10, accordingly, wherein "the multiplexing storage medium controller disables the CPU before the non-XIP type storage medium controller accesses the boot codes".

Re claim 7, the prior art of record fails to disclose or suggest the subject matter of claim 6, wherein "disabling the CPU by the multiplexing storage medium controller

before the non-XIP type storage medium controller accesses the boot codes from the storage medium when said storage medium is a non-XIP type storage medium”.

Re claim 12, the prior art of record fails to disclose or suggest the subject matter of claim 10, wherein “the multiplexing storage medium controller re-activates the CPU when the non-XIP type storage medium controller accesses and stores successfully from the storage medium”.

Response to Arguments

Applicant's arguments filed 06/18/2006 have been fully considered but they are not persuasive.

The applicant argued that (1) (applicable for independent claim 1) Tang does not teach selectively accessing boot codes from either an XIP type or non-XIP type memory device. Similarly, the applicant further argued that (2) (applicable for independent claims 6 and 10) Tang does not teach determining whether the storage medium is a XIP type storage medium, or accessing codes directly from the storage medium through a multiplexing storage medium. In addition, the applicant argued the proper basis for combining the cited references.

The examiner respectfully disagrees.

Regarding (1), Tang discloses accessing boot codes from a NAND flash memory (as admitted by the applicant) containing the boot code. The applicant defines the XIP type storage medium as NOR-type flash memory (see Specification, page 1, lines 10-18) and even further states that the NAND-type flash memory lacks XIP functions (see Specification, page 2, lines 23-26). Thus, a NAND flash memory is a non-XIP type of

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memory device, which meets the language of claim 1. Although the applicant includes the word "selectively" in the argument, no such word is present in claim 1, thus rendering the argument moot.

Similarly for (2), Tang discloses determining whether the storage medium is a XIP type storage medium as discussed above. Tang further discloses accessing codes directly from the storage medium (paragraph 0024, lines 6-8, lines 9-16) through a multiplexing storage medium controller (325 plus 330). Thus, Tang meets the claim language of claims 6 and 10.

With regards to combining Hatakar with Tang, Hatakar teaches storing different applications in different storage devices similar to the applicant's invention (i.e. XIP and non-XIP applications residing on XIP and non-XIP storage devices, accordingly) (paragraph 0030, lines 9-12, paragraph 0034, lines 1-4, FIG. 3, 316, paragraph 0026, lines 13-19, paragraph 0030, lines 1-2, FIG. 3, 320). One of ordinary skill in the art would be motivated to combine Hatakar with Tang because Hatakar teaches proper application reconfiguration at run time (including determination on the type of storage device), thus utilizing both types of memories (i.e. whether it is a XIP or non-XIP type storage) in order to take advantage of both types of storage devices by either increasing the memory speed or decreasing the memory space (paragraph 0003 – paragraph 0004).

For the reasons stated above the rejections for independent claims 1, 6, and 10 are maintained.

Dependent claims 4, 5, 9, and 13 stand rejected as indicated in the previous Office action.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stefan Stoykov whose telephone number is (571) 272-4236. The examiner can normally be reached on 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on (571) 272-3670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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